
With compts of
the Author
May 23d 1876.

ON

HÆMATURIA

AS A

SYMPTOM OF DISEASES

OF THE

GENITO-URINARY ORGANS.

BY

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TO

My Friend

DR. A. W. PERRY,

LATE PROF. OF CHEMISTRY
NEW ORLEANS SCHOOL OF MEDICINE,

This Memoir

IS MOST RESPECTFULLY INSCRIBED

BY

THE AUTHOR.

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PREFACE.

MANY times while engaged in the arduous duties of my profession, I have felt the need of consulting some authority, concise, practical, and reliable.

It is on this account, I have concluded to publish this memoir, believing that it will meet the wants of the physician and genito-urinary surgeon in practice far better than many of the more voluminous works, written by theorists and specialists, without due regard to the practical necessities of the physician, who is already burdened and worn down with the cares of a large practice, and has but little time for reading.

I have selected this subject because it is one in which I have always taken great interest, and the facilities which I have had during a period of fifteen years of observation in hospital, military and civil practice, have afforded me more experience than is enjoyed by most practitioners. There is no class of diseases with which I am acquainted less understood by the profession, or which causes greater anxiety to the patient, and which if properly and early treated is attended with more satisfactory results, than the diseases of the genito-urinary organs.

ON HÆMATURIA.

HÆMATURIA AS A SYMPTOM OF THE DISEASES OF THE GENITO-URINARY ORGANS.

HÆMATURIA, from hæmato, blood, and ureo, to urinate, is not a disease itself but a symptom of the most formidable diseases of the genito-urinary tract, and there is no symptom which is more common or at times more perplexing to the genito-urinary surgeon or physician. It is not in the province of this little volume to enter minutely into the etiology or pathology of all the diseases which give rise to Hæmaturia, but to briefly call the attention of the profession to some of the most important diseases, their diagnosis and treatment.

CHAPTER I.

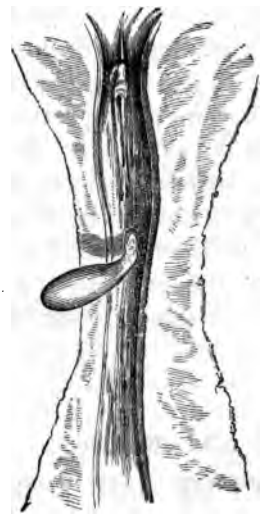
DISEASES OF THE URETHRA.

POLYPOID GROWTHS OF THE URETHRA.

LET us first commence with polypoid growth of the urethra, which is a common cause of hæmaturia. This tumor, which is usually situated at the junction of the membranous and prostatic

portion of the urethra in the male, ranges in size from a pin's head to that of a bean, whilst in the female it occurs near the meatus, and may attain a size of several pounds; sometimes there are two or three in number; the patient does not complain of much pain, but in urinating experiences an impediment which after a few seconds is overcome and the urine flows freely, caused by the polypus

Fig. 1.



Polypoid Fibroma.

being pushed a little forward. These growths are much more common in the female, in married than in unmarried women, and are chiefly met with between the ages of thirty-five and fifty years.

Patients thus affected complain of frequent desire to micturate, and considerable irritation of the bladder. There is nothing remarkable about the urine except that it is occasionally bloody; under the microscope nothing is seen except a few blood-disks. In a case of this kind occurring in a woman forty-one years old, the tumor projected one inch through the genitals, from the urethra, weighed three pounds, and was successfully removed by Dr. Honig; this woman suffered from hæmaturia, dysuria and constipation.

Treatment.—Various methods have been adopted for the removal of these growths: dilatation of the urethra, and avulsion by forceps; the silver and ordinary ligature have also been used, and the extirpation is not difficult in the female, but in the male it is far more difficult on account of the length and narrowness of the urethra. The most ingenious procedure is that of Dr. Eberman, which consists in introducing an endoscopic tube with a closed end, and entangling the growth in a large oval eye near the end, when a second tube with an open end and just fitting the first is pushed in and the polyp cut off; the latter tube is then removed and a styptic applied to the cut surface.

VASCULAR TUMORS OF THE URETHRA.

Vascular tumors are single or multiple, a dozen sometimes existing, and are rarely larger than a grain of wheat; they produce more irritation of

the bladder than the polypoid tumors, there is frequent desire to urinate with the same resistance to the flow as in the polypoid, accompanied with more pain, which is felt in the loins over the symphysis, extending sometimes downwards into the thighs; at times these growths become ulcerated and discharge a foul, irritating ichor; when this occurs blood is found constantly in the urine,

Fig. 2.

Vascular Tumor of Female Urethra.

and occasionally the bleeding is abundant for several days, threatening to destroy life.

Dr. Gross mentions a case of a physician in North Carolina who suffered for six or seven years with this affection. The patient becomes melancholy, dyspeptic, and by the protracted irritation and loss of blood life itself is threatened. The introduction of a catheter is followed by great pain and bleeding; if the urine is passed into two glasses, the first contains nearly all the blood, showing that the disease is anterior to the bladder.

Prof. Van Buren regards these cases, especially in the male, as hopeless. Prof. Gross, on the contrary, regards these cases in a more favorable light, and says, that with judicious and prompt treatment the great majority may be cured; he advises shaving them off, and if near the meatus where they can be reached he shaves off the mucous membrane. Chromic acid has been highly recommended, but Prof. Gross prefers Tinct. iodine, whilst Gant and Sir Hy. Thompson use the galvano-cautery. Although it is not a common practice, I can see no reason why the urethra should not be laid open and the soft tumors gouged out by the finger-nail of the surgeon, and the bases cauterized.

CANCER OF THE URETHRA.

There is another disease of a malignant character which resembles very much the tumors just described; unlike the vascular growths they commence in the bladder or prostate gland and slowly extend into the urethra, or arise from malignant disease of the glans-penis and extend backwards; the symptoms are similar to those just described, but greatly exaggerated; the pain in the urethra is in many cases almost constant; later on in the disease the tumors break down, and large quantities of debris are passed in the urine; the patient's general health gradually fails, the glands in the groin become involved,

the cancerous cachexia appears; the attacks of hæmaturia become more frequent and copious, and the pain is intensified as the disease advances, and the patient sinks from exhaustion.

This disease is always fatal, and the duration from eighteen months to six years. Treatment: only palliatives are required, and attention to the general health; moderate open air exercise, generous diet, and anodyne suppositories at night or when the pain is severe. Mild astringent solutions of Acetate of lead, one-half grain to the ounce, or Nitrate of silver, one-quarter grain to the ounce, may be injected into the bladder with benefit. Too frequent use of the catheter should be avoided, as it is often followed by dangerous hæmorrhage.

In addition to the growths just mentioned papillary fibroma and villous papilloma occur in the urethra, but these will be described in treating of vesical hæmaturia.

STRICTURE OF THE URETHRA.

Next though not least is stricture of the urethra, which often gives rise to copious unexpected hæmorrhage, continuing several days in spite of the efforts of the surgeon to arrest it. In September, 1875, I was called at 4 A.M. to see a man 37 years old, moderately temperate, who had been bleeding several hours; the chamber he had used was two-thirds full of bloody urine, most

of it being blood; he said he had never passed blood before, and knew of no cause for the bleeding except that he had been buggy riding, the evening before (which was quite cool), with a short coat and no robe; he assigned cold as the cause. I was satisfied with his statement and ordered Calomel 8 grains, Jalap 20 grains, to be taken at once; cool drinks; cold applications to the perineum, and rest in recumbent posture. 7 A.M. found the patient comfortable except a slight desire to urinate; 9 A.M., purgative had produced three copious stools; he again urinated and passed a large quantity of blood; 11 A.M., gave him one-third grain Morphia. Returned at 5 P.M., the patient had slept well, and the frequent desire to urinate had passed off. Next day saw him at 8 A.M., he had passed a comfortable night; had urinated three times in the night, and had passed a half pint of blood. I then ordered fluid Ext. ergot in ʒ doses every four hours, cold to the perineum, ice suppositories in the rectum and low diet; 3 P.M., found him somewhat better, ordered the treatment continued until entirely relieved.

Next day at my visit at 11 A.M., he had a comfortable night; the blood had entirely disappeared from the urine. In two weeks I examined the gentleman and found that he had a stricture of nine years' standing, situated at the junction of the spongy and membranous portion of the urethra. This I proceeded to dilate, commencing

with a No. 2 bougie, and in ten days a No. 8 passed with facility; the patient was then called away suddenly on business. In May, 1876, he again called at my office, and on examination I found the stricture was returning, as only a No. 5 could be passed; in a week's gradual dilatation I was able to introduce a No. 9. I then directed the patient to use a No. 8 himself twice a week. During the whole time of the treatment there was no bleeding, and no inflammation was caused by the treatment; the patient is now enjoying good health and the bleeding has not recurred.

In 1874 I saw in consultation with Dr. Ayer a patient who had a very obstinate stricture, for which he had been operated upon by a well-known surgeon of this city by external division, two years previously. I found the patient passing large quantities of mucus, pus, and blood, and notwithstanding that this mucus, pus, and blood had been passing for four years, gradually increasing till the quantity had become almost incredible, the patient was not emaciated, had good appetite, and could sleep well at night, but for the frequent desire to urinate, and seemed to enjoy pretty good health. I was of the opinion that the greater part of the trouble was in the bladder, which was coincided in by Dr. Ayer, and suggested the use of warm injections into the bladder of a weak solution of Carbolic acid; a generous diet and moderate open air exercise.

I lost sight of the patient from this time, although I heard of him at times from Dr. Ayer. In 1875 Dr. Ayer told me that the patient had put himself under the care of Dr. Sawyer, who had cut into the bladder; and that the patient was now well. Regarding the case of great interest, I desired to follow it up closely, and inquired from the patient himself. He informed me that he was in perfect health, and had not passed blood for two years. I also inquired from Dr. Sawyer the character of the operation performed, and his opinion of the seat of the disease.

He made an incision through the old stricture down through the prostatic portion into the bladder; his opinion was that both the membranous and prostatic portion of the urethra were diseased, and that the internal division of the old stricture was not entirely healed; no other treatment was used beyond washing out the bladder by mucilaginous injections. Dr. Sawyer thought it probable that there were ulcers of the prostate, the result of former abscesses caused by the original stricture.

Paul Eve, of Nashville, was the first surgeon to recommend rapid dilatation, which mode of treatment had many advocates, and soon became popular, both in this country and Europe. This led to the invention of Holt's dilator, which is still in common use in this country, although it has been nearly abandoned in Europe, and in its stead internal urethrotomy adopted. This opera-

tion was invented and used by Civiale, and since adopted by Sir H. Thompson. American surgeons generally prefer the old method of gradual dilatation. I have treated forty odd cases by this method myself without any serious accident.

CHAPTER II.

DISEASES OF PROSTATE GLAND.

CONGESTION OF THE PROSTATE.

CONGESTION of the prostate gland is another cause of hæmaturia; sometimes the already hypertrophied gland becomes so congested that the urine is entirely stopped, and the use of the catheter is absolutely necessary to relieve the patient; it matters not how skilfully and carefully it is used, in many instances, copious and prolonged hæmorrhage follows.

In November, 1876, I was called to see a man aged 47 years, a hack-driver, who complained of frequent and ineffectual desire to urinate, in which condition he had been for twenty-four hours. I drew off the urine with a gum-elastic catheter; six hours after I found that he had had a copious hæmorrhage. I prescribed a cathartic, after the operation of which gave him an anodyne, which caused a sleep of six hours. He awoke feeling

somewhat better; that night he grew worse, and the desire to urinate returned. At my second visit I repeated the anodyne; six hours after returned again, and the patient not having passed water for thirty hours, I attempted to relieve him by the gum catheter, and drew off a pint of urine; the bleeding continued, although the desire to urinate did not seem to be so great. I then prescribed ʒ doses of fluid Ext. ergot; after the third or fourth dose the bleeding stopped, and the patient gradually and slowly recovered, although he suffered from dyspepsia for months, and occasionally passed urine as dark as porter; this blood must have come from the bladder, although at first the blood flowed freely and was not intimately mixed with the urine; at times the patient passed pus. I am of the opinion that in the commencement there was simple congestion of the prostate, which afterwards terminated in inflammation extending back to the posterior portion of the gland, and the blood regurgitating into the bladder caused the dark-colored urine, as he said he passed urine like coffee-grounds, showing that a clot had formed in the bladder which had disintegrated. The patient changed his occupation to one less exposed to inclemencies of weather, and is now enjoying tolerable health; has had no hæmorrhage for several months.

Case 2.—While visiting surgeon to the City and County Hospital of San Francisco, a man aged 65 years, by occupation church janitor, en-

tered the hospital with frequent desire to pass urine and complete retention. As the retention had existed thirty-six hours I proceeded to relieve him; on examination, per rectum, I found the prostate enormously enlarged; with some difficulty I passed a catheter, no force being used; the bladder seemed to be full of clotted blood and urine. I drew off nearly a quart of this blood and urine, but was not satisfied whether the blood came from the posterior part of the prostate and regurgitated into the bladder, or whether over-distension of the bladder had not caused a rupture of some of its vessels. At my next visit, twenty-four hours after, I found that he had had a restless night, but a great deal of blood and urine had passed. I ordered ʒ doses of fluid Ext. ergot, every six hours, with cold enemata morning and evening, which treatment was kept up forty-eight hours, when the bleeding ceased; he soon regained his health, resumed his occupation, and remained well, until two years after, when he died of apoplexy; no autopsy was made.

Usually the congestion is relieved by the hæmorrhage, and no treatment is required except to guard against exposure to cold, and attention to the general health. Should the congestion not be relieved by the depletion, it may terminate in inflammation, resulting in suppuration and ulceration of the gland. The inflammation is ushered in usually by a chill, frequent pulse, and febrile

symptoms. The treatment should be directed to prevent, if possible, chronic inflammation or suppuration.

A brisk cathartic, followed by leeches to the perineum, antiphlogistic diet, and warm hip baths are the best modes of treatment. In speaking of hip baths Sir Hy. Thompson says: "They may be frequently repeated with advantage during the treatment, but should never be applied for a lengthened period; six to eight minutes is the longest time I think it right to permit a patient, suffering from inflammation of the prostate or bladder, to sit in the bath, which should commence at 100° F. and be raised to 103° to 105° F. during the period named. Such a method appears much more advantageous to me than prolonging the sitting fifteen minutes." "The object of the bath is not to induce a flow of blood to the pelvic viscera, but on the contrary to expand and fill the vessels of the skin by a smart impression quickly made upon it; one which is also to a certain extent participated in by every part of the cutaneous surface, and it is by using the bath as described, that a general diaphoresis is effected, and a temporary congestion of the pelvic surface, with a result of relieving that of the deeper parts."

On examination, per rectum, it is found very warm and sensitive, the prostate gland somewhat enlarged, very sensitive to the touch and constant throbbing. If the inflammation does not subside in a few days by resolution, fluctuation

will be felt, showing the formation of an abscess; this must be opened through the anus, or by deep incision through the perineum; if the abscess does

Fig. 3.

Abscess of Prostate.

not point well the operation must be deferred a few days and poultices applied to the perineum; sometimes the abscess opens into the urethra and the pus passes away with the urine.

ULCER OF PROSTATE.

The abscess may heal in a few weeks, or remain open, forming an ulcer, which causes purulent urine and occasional hæmaturia; indeed the urine is rarely entirely free from blood during the existence of the ulcer. These ulcers are sometimes very obstinate and will not yield to any local treatment, and it becomes necessary for the surgeon to lay open the prostate gland, that a cure may be effected. The symptoms in chronic are very similar to those in acute prostatitis: weight about the anus and sometimes hæmorrhoids, as the hæmorrhoidal and prostatic plexuses of veins

freely communicate; there is not necessarily great enlargement; the passing of the catheter gives more than usual pain when it traverses the prostatic urethra and neck of the bladder; the urine is a little cloudy, but this is found to be due to shreds of tenacious, muco-purulent matter and masses of epithelium, which have their origin from the prostatic urethra, and not from the bladder or kidney, as is shown by passing the urine in two glasses, when the first will contain all the deposit and the last will be clear. This affection has symptoms like those of small calculi in the bladder; occasional tenesmus and blood with the last few drops of urine, which is always increased by rough exercise. The disease is very tedious both to the surgeon and patient. The treatment most to be relied upon, is the application, once in two weeks, of a 15 grain solution of Nit. silver to the prostatic urethra, by means of a sponge in Lallemand's porte-caustic; counter-irritation by Tinct. iodine, Nit. silver, or blisters may be applied to the perineum, care being taken not to touch the raphé or anus. As these patients suffer more or less from indigestion, due attention must be paid to the general health and state of the bowels. Strychnia, Iron, and Ext. rhubarb should be given as a tonic and laxative. Moderate open air exercise is of great use.

TUBERCLE OF THE PROSTATE.

Tubercle of the prostate is a rare affection, and

is seldom found in post-mortem examinations, only eighteen cases having been reported from all the hospitals of Great Britain; three of these were over fifty years of age, and fourteen from twenty-three to forty-three years. There is no symptom peculiar to this affection, but they are much like those of chronic prostatitis. There is occasional bleeding and more constitutional symptoms and emaciation. The coexistence of tubercular deposits elsewhere in the body will elucidate the diagnosis. Local interference is to be avoided.

Treatment.—The general treatment of tubercle.

CALCULUS OF THE PROSTATE.

Fig. 4.

Prostate Calculus.

This gland is sometimes the seat of calculi, and during the progress of their growth attacks of bleeding occur, although the hæmorrhage is less frequent and copious than in other affections of this gland, but it readily yields to rest in the recumbent position and ice in the rectum. Where ice cannot be had, cold water injections into the rectum may be substituted. The symptoms are those of chronic prostatitis; digital examination,

per rectum, and the use of a short-beaked sound will enable the surgeon to make a correct diagnosis. If the patient suffers much from inconvenience the best plan is to remove the calculus by the median or bilateral lithotomy operation.

CANCER OF PROSTATE.

Fig. 5.

Sarcoma of Median Portion of Prostate.

Cancer of the prostate is a very rare disease, and is almost invariably the encephaloid variety. In an abstract of deaths from cancer in Paris and suburbs from 1830 to 1840, there were 8287 cases of cancer, of which only five affected the prostate gland. The symptoms are similar to those of

other diseases of the prostate, except that the hæmorrhage is more copious and difficult to control. At first it appears periodically, but later the urine is constantly bloody; by rectal examination small nodules can be felt beneath the capsule of the gland; the neighboring glands are involved, the indurated lymphatics extending up the iliac and lumbar regions; acute pain is not a constant symptom; at times the hæmorrhage ceases for months to return in greater quantity; the cancerous cachexia is well marked; the digestion becomes impaired; great emaciation and debility ensue, and finally death relieves the patient of his sufferings. The duration in adults is two and a half to six years, in children four to eight months.

Sir Hy. Thompson mentions only one well-authenticated case of scirrhus, which was reported by John Adams, of the London Hospital.

The treatment during the attacks of hæmaturia, consists of rest in recumbent position, Alum iron, used by Sir Hy. Thompson, in 15 grain doses, every four hours, and ice in the rectum.

Prof. Gross prefers Sulphuric acid in Infus. roses, 10 to 20 minims to the ounce, one-half ounce every three hours until the hæmorrhage is arrested.

In bleeding of traumatic origin there can be no room for doubt. The hæmorrhage is sometimes abundant and lasts for several days, and requires prompt and energetic treatment; absolute

rest in horizontal posture, ice or injections of cold water in the rectum, cold to perineum, and the internal use of astringents before mentioned.

CHAPTER III.

DISEASES OF THE BLADDER.

VARIX AND HÆMORRHOIDS.

THESE are the dilated veins of the vesico-prostatic plexus, and constitute a well and long known disease, which was described in the seventeenth and beginning of the eighteenth century by Bonetus and Morgagni. It is most common in old age, but sometimes met with in youth, when it is caused by stone in the bladder, hypertrophy of prostate, and organic diseases of the rectum. These veins become inflamed, and after violent exercise or straining they rupture, and give rise to hæmorrhage which may prove fatal if not promptly arrested. An instance occurred at the Hôtel Dieu, Paris, in the service of Prof. Laugier, in which the bleeding was so abundant as to prove fatal. The autopsy revealed the presence of several varices at the neck of the bladder, upon one of which was a large ulcer, from which the bleeding had evidently proceeded; the bladder was

healthy in other respects. The diagnosis is very difficult, and sometimes wholly impossible.

Treatment.—Rest, with the feet elevated above the head. By relieving the tension of the vessels in this way, the hæmorrhage is much more easily controlled; ice in the rectum and fluid Ext. of ergot internally are the most efficient means of arresting the hæmorrhage that I know of; compression and styptics should be tried. If these means fail the neck of the bladder should be laid open, as in the lithotomy operation, and the bleeding vessels ligated. When the bleeding ceases cold water enemata should be used morning and evening to prevent recurrence, and the patient enjoined never to take violent exercise in the erect position.

VILLOUS TUMORS OF THE BLADDER,

Which are usually situated near the neck of the bladder or trigone, give rise to profuse and repeated hæmaturia. This tumor is for the most part multiple, and less frequent than cancer, but more frequent than cysts or fibrous tumors of the bladder; it is not at first accompanied with much pain, except where the tumor is pedunculated and is forced down into the urethra during micturition. The presence of the tumor causes irritability of the bladder. This is usually a disease of adult life; violent exercise, especially riding over rough roads, suffice to bring on attacks of

hæmorrhage. This tumor never terminates in cancer as the older surgeons supposed; its duration is from two to four years; occasionally débris

Fig. 6.

Multiple Papillary Fibroma of the Bladder.

is thrown off, the true character of which is determined by the use of the microscope; later in the disease the urine is almost constantly bloody; the desire to urinate becomes more frequent with the increasing irritability of the bladder; pus is constantly found in the urine, and the patient, worn out with suffering and loss of blood, if not relieved dies from exhaustion.

Treatment.—The habitual use of cold water enemata is excellent in this affection.

Prof. Atlee places great reliance on the use of ℥ss. to ℥ doses of fluid Ext. ergot, after the hæmorrhage has been controlled, daily at bedtime. He declares that he has treated several cases by this method, controlling the bleeding for six to eight years. Other surgeons have derived great benefit from the use of injections of astringents into the bladder once or twice a week; Nitrat. of silver or Acetate of lead as before mentioned.

When the bleeding is copious great benefit may be derived from the internal administration of astringents, as Iron alum, Gallic acid, Tannin, Sulphuric acid, Monsell's solution.

Civiale was in the habit of crushing these tumors with a lithotrite, and allowing the fragments to be thrown off spontaneously; so delicate was his touch that he could remove a tumor in this way from the size of a pea to that of a goose egg. I saw him, in 1859, operate upon one of this latter size, in a man fifty-six years old, who died in three or four days afterwards.

Prof. Gross has reported seventeen cases of villous tumor of the bladder, in twelve of which only palliative treatment was used; in five the tumor was removed by perineal cystotomy, and excision with curved scissors, and styptics applied to cut surface; two of these last died, one was much benefited, and two were entirely cured. Prof. Gross is of the opinion, that when the diagnosis is made out, the tumor should be removed without delay.

Gustave Simon, a celebrated German surgeon, lately deceased, preferred removing these tumors by a loop of wire, introduced through the urethra through a canula.

CARCINOMA OF THE BLADDER

Fig. 7.

Carcinomatous Vesical Papilla.

Is a rare affection and belongs to advanced age, the average age of cases being fifty-eight years. Of 8289 cases of deaths from cancer, collected and analyzed by M. Tanchou, only 72 were of the bladder, these were the epithelioma or encephaloid, only one being scirrhus. The duration is from one year to eighteen months, although in some remarkable cases life has been prolonged

eight or nine years. Hæmaturia is a late but prominent symptom, and occurred in 75 per cent. of the cases; it is periodical early in the disease, and is sometimes absent for several months; in a more advanced stage blood is constantly found in the urine; debris is thrown off, shown by the microscope to be of carcinomatous structure. By the combined use of the sound in the bladder and the finger in the rectum, one is enabled to feel the walls of the bladder, which are increased five or six times the normal thickness; occasionally nodules may be felt in different portions of the bladder, and if the cancer is epithelioma, a grating may be felt like that of scirrhus, which caused this affection to be considered as scirrhus formerly, but modern investigation has shown the structure to be that of epithelioma; if it is encephaloid the grating is absent, and it has a doughy feeling to the touch.

In 75 per cent. of the cases there was burning pain about the neck of the bladder and symphysis, extending sometimes down into the penis, down the thighs, and up the course of the ureters to the kidney.

The most common situation is at the neck of the bladder or in the trigone, and at the orifices of the ureters, which are sometimes blocked up, and death ensues from uræmia. The treatment is, of course, only palliative; rest, with the hips elevated, and the internal use of astringents before mentioned to arrest the hæmorrhage, and ice

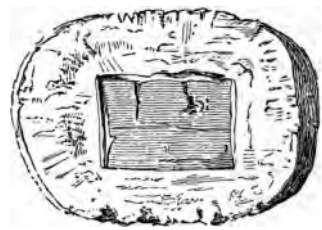
in the rectum. For the relief of the pain Morphia in suppositories; Hydrate of chloral at times acts well as an anodyne; moderate exercise in the open air and generous diet are requisite.

CALCULUS OF THE BLADDER.

Fig. 8.

Thorny Calculus.

Fig. 9.



Calculus with Nucleus of Cork.

Calculus is also a common cause of hæmaturia, which is rarely sufficient in amount to require treatment; it usually comes on after rough exercise. In these cases there is vesical tenesmus, and the blood usually flows with the last few drops of urine. Other symptoms of stone are present: sudden stoppage of the urine, weight about the rectum, shooting pain in the penis, extending down the thighs, sometimes pain in the back. On examination with the sound the stone may be detected, which will settle the diagnosis.

The treatment is obvious: the stone should be removed by lithotrity if small, and lithotomy if larger. In case it is unadvisable to operate for the removal of the calculus, absolute rest, alkaline

drinks, attention to the diet, and avoidance of rough exercise will make the patient quite comfortable.

ENTOZOON BILHARTZII

Is the name of a parasite frequently found in the bladder; the disease is endemic in Egypt, India, and the Isle of France. It is found embedded in the mucous membrane and submucous tissue at the neck of the bladder. The mucous membrane is highly congested and of a purplish hue. The parasite and ovules may be detected in the urine by the use of the microscope. The patient complains of itching and burning pain at the neck of the bladder, which sometimes radiates into the penis, down the thighs and up the course of the ureters; the urine is generally tinged with blood, with occasional attack of copious bleeding which have proven fatal; the parasites may remain embedded and multiply without serious impairment of the general health. Surgeons have been very much puzzled in the treatment of these cases, and many have abandoned the cases as incurable; this is comparatively a new disease and a great deal remains to be done in treatment.

Against each variety of intestinal entozoa we have nearly certain remedies: for the tænia, Kousso and Male fern; for lumbricoides, Inf. Spigelia Marilandica; for the ascaris vermicularis, a solution of Chloride of sodium. If the treatment of this disease by the injection of the above

remedies should fail, I would at once use Oil of turpentine, which is a sovereign remedy against all parasites. I would apply a mixture of two parts Alcohol to one of Turpentine, once a week, increasing the strength gradually, to the neck of the bladder by means of a sponge in Lallemand's porte-caustic.

ULCER OF THE BLADDER

Is usually the result of acute or chronic cystitis, and which may also be caused by a rough stone. In these cases the patient complains of dull pain over the symphysis, increased by rough exercise, and the urine for the most part contains blood and pus. The pain sometimes extends into the testicles and ureters; the bleeding is not often abundant, but sometimes comes in sufficient quantity to give great alarm to the patient, and anxiety to the physician. Not being able to exercise enough in the open air, the digestion fails, the patient becomes dyspeptic, emaciated and debilitated; the bladder troubles increase, and diarrhœa ensues, which is sometimes caused by a slight vesico-rectal fistula, the urine acting as an irritant to the mucous membrane of the rectum; this may continue for months without the cause being discovered. If the perforation is of large size, fecal matter sometimes passes into the bladder, and is readily discovered in the urine; the discharges of fecal matter come on periodically, and cease to return at some distant time.

Prof. Gross mentions a case of a man who had been passing fecal matter through the bladder for twenty-five years. If there is a perforation without adhesions being formed between the rectum and bladder, the urine flows into the abdominal cavity, exciting peritonitis, which proves fatal in one or two days.

Treatment.—Alkalies to render the urine less irritating, and warm intra-vesical injections of a solution of Carbolic acid, ʒi to Oi. Phillipe, of Paris, placed great reliance in Inf. triticum repens; Aqua picis is a favorite injection with some surgeons. Attention must be paid to the general health; moderate exercise in the open air, and a nutritious easily-digested diet chosen.

CHAPTER IV.

INJURIES OF THE BLADDER.

TRAUMATIC AFFECTIONS OF THE BLADDER

Are quite common and in many cases prove fatal in a short time. Punctured and gunshot wounds, and rupture of the bladder, are all attended with hæmorrhage.

PUNCTURED WOUNDS.

Punctured wounds are usually situated in the anterior portion of the bladder. The hæmor-

rhage is not usually copious, and all that is requisite in the way of treatment is the recumbent position, the constant evacuation of the bladder by means of a fixed catheter, to prevent infiltration of urine, attention to the bowels and diet, and combating the inflammation on general principles until the wound is healed.

GUNSHOT WOUNDS.

Gunshot wounds of the bladder are of much more serious character, and there are usually two openings; the opening of entrance is as common in the posterior as in the anterior portion of the bladder.

In 1862, at the battle of Sharpsburg, a soldier of my regiment received a minié ball just above the pubes, passing directly through the bladder and lodging against the last joint of the sacrum; bloody urine began passing through the rectum, and continued twenty-four hours, after which it became clear; none flowing through the urethra. The patient did not suffer much pain, no inflammatory symptoms arose; he was kept in the horizontal position, and on the third day a large minié ball was passed through the rectum, during defecation. The patient rapidly convalesced, and was walking about in a week afterwards; in ten days the urine began flowing through the urethra free from blood, and in three weeks it had entirely ceased passing through the rectum, and all

flowed the natural way; in the fifth week he returned to his regiment well.

RUPTURE OF THE BLADDER,

Says Nélaton, is a very common accident, and is much oftener met with in the male than in the female, as proved by M. Höuel, who, in 1857, wrote a thesis on the subject in his concours for agregé de la faculté de Medecine de Paris. He collected histories of forty-four cases, thirty-nine of whom were males and only five females. So formidable is this accident that Nélaton reports only two recoveries, one mentioned by Syme, of Edinburgh, and the other by M. Denonvilliers. The rupture generally takes place in the posterior portion of the bladder. According to M. Höuel, the rupture occurs six times in the posterior to where it occurs once in the superior part of the bladder, and rarely in the anterior portion of the bladder.

M. Höuel has experimented in ten to fifteen cases by injecting the bladder in the cadaver until rupture occurred, in all of whom he found the rupture to take place in the posterior portion of the bladder, above the neck, where it is in contact with that part of the rectum which lies in the concavity of the sacrum. According to Prof. Laugier, it is at this point that one most frequently meets with rupture.

[The reader will pardon digression, as I cannot

well describe the different kinds of rupture of the bladder without enumerating some of the causes.]

Rupture sometimes occurs spontaneously either from retention caused by a stricture or hypertrophied prostate, or from ulceration of the bladder. Wrestling, a fall, a blow on the hypogastrium, the passage of the wheel of a vehicle over the abdomen, or even a sudden misstep when the bladder is full may cause a rupture which may be complete or incomplete; in females the rupture usually takes place during parturition, hence the importance of keeping the bladder empty during labor.

PARTIAL RUPTURE OF THE BLADDER.

Fig. 10.

Rectal Puncture of the Bladder.

In 1864, during the late civil war, I was called from my post in North Carolina, about ten miles distant, to see an old gentleman, 67 years of age,

married, perfectly temperate although of feeble constitution; he had never had any venereal disease, or any trouble in passing water. I found him with retention of urine which had existed for thirty-six hours, and which he attributed to having gotten his feet damp a day or two before. The prostate gland seemed to be in a healthy condition, and I had no trouble in passing a catheter and evacuating the bladder of its contents, which was entirely free from blood. I remained with him all night, and before I left the next morning again drew off the urine, which was still free from blood. I left him a gum-elastic catheter, which I instructed him how to use, and directed him to draw off the urine three times a day, until the bladder regained its former tonicity, which had been very much impaired by the previous overdistension.

The next day, in the evening, I was again sent for, but did not go until the day after, as he had a country practitioner with him. On my return I found that he had not passed any water for forty-eight hours, and the bladder was greatly distended; on passing a catheter found that the bladder was filled with clotted blood, and after sitting by him for two or three hours removing the clots, I finally succeeded in drawing off a pint of bloody urine; a brisk cathartic was given, which acted freely, but the next day the distension seemed to be as great as ever.

The patient was placed in a bath-tub with hot

bricks, on to which hot water was poured and a vapor-bath thus produced, which was repeated three times during the day; the catheter was used again, but I was unable to get anything but clotted blood; an anodyne was given and he slept several hours; at 6 P.M. felt better and took some milk punch; at 9 P.M. he was placed again in the bath; at 11 P.M. his extremities became cold, pulse intermittent and scarcely perceptible at the wrist, and he implored me to open the bladder and evacuate it, as his sufferings were more than he could bear.

I found in the house a gourd with a large, straight handle. I cut off four or five inches of the handle, and made an oval longitudinal opening about two inches long, near the closed end, thus converting it into an anal speculum. I placed the patient in the lithotomy position, and introducing my gourd handle speculum into the rectum, with the opening upwards, I made an incision one inch long through the speculum, through the anterior wall of the rectum, into the bladder; a stream of blood and urine flowed freely to the amount of one-half gallon. Brandy was given and in a few minutes after an anodyne, which produced several hours' sleep. He was placed in bed, with hot bottles and hot blankets placed around him, and he woke up with a good pulse, feeling well, and he seemed to have entirely rallied. I made a self-retaining catheter of lead, moulded around a small rod in a joint of cane-

pole, and introduced it through the rectum into the bladder, giving it a curve adapted to the parts.

The urine commenced to flow through the catheter, drop by drop, and was only slightly tinged with blood, and became clear on the second day. He was cheerful, free from pain, eat and slept well, and so continued up to the fifth day, when he became a little restless, complained of pain in the glans penis and lumbar regions, with slight febrile symptoms, and the urine no longer flowed through the catheter; six or eight hours afterwards the flow of urine returned, but in very small quantity, decreasing in quantity till his death. Repeated examinations were made, but no urine could be found to have infiltrated the abdominal cavity. Opium and Quinine were freely given, with brandy, beef tea, and strong soups, but he died quietly on the eighth day, from uræmic intoxication.

The presumption was that he died of acute nephritis, which was occasioned by the overdistension of the bladder blocking up the ureters, thereby producing congestion and inflammation of the kidneys. The bleeding was supposed to have come from a rupture of some of the vessels of the bladder during its overdistension, inasmuch as the bleeding did not occur until the bladder had been distended to its utmost capacity. No autopsy was made.

In 1872, while visiting surgeon to the City and

County San Francisco Hospital, a man, aged 45 years, was admitted to my wards, who had had a slight fall down a pair of steps. Six hours after the fall he found that he was unable to urinate, and the nearest physician was sent for, who attempted to draw off the urine by a catheter, and failing, recommended him sent to the hospital. At my morning visit, eight hours after the accident, I found the man's abdomen was considerably swollen; on palpation detected fluctuation. I introduced a catheter into the bladder, and drew off about one ounce of bloody urine; called Drs. Toland and Bentley in consultation, and it was decided that the bladder was ruptured. The abdomen continued to distend, and a strong urinous odor emanated from the body. The next day Dr. Toland saw him again, the patient had now symptoms of uræmic intoxication; in six hours afterwards he died, and strange to say during the whole thirty-six hours there was no suffering.

Autopsy, twenty-four hours after death. The heart, lungs, liver, and kidneys were free from organic disease. In the posterior portion of the bladder, where it lies in the concavity of the sacrum, a circular rupture the size of a quarter dollar in circumference existed.

In view of the great mortality attending these accidents, and from the lesson we have learned from the first reported case, of the man wounded in the bladder at the battle of Sharpsburg, and

twenty-eight other reported recoveries of the Confederate and Federal surgeons in the late war, I am decidedly of the opinion that these cases should never be abandoned by the surgeon as hopeless, as the most of them cannot only be relieved and their lives prolonged, but a great many be cured.

As soon as the diagnosis is made out, the surgeon should at once proceed to operate as follows: Introduce a sound into the bladder, and with the finger in the rectum, the surgeon will for the most part be able to detect the point of rupture; arriving at this point so manœuvre the sound as to engage it in the opening, the finger is then withdrawn, and a bivalve speculum introduced into the anus; the beak of the sound may then be felt through the walls of the rectum, and an incision with a sharp-pointed bistoury is made through the rectum down on to the beak of the sound, the speculum is then withdrawn, the finger introduced, and the point of the sound drops through the opening in the rectum on to the point of the finger; the urine may be made to flow easily in this way until the whole abdominal cavity is evacuated.

The patient being placed on a hard mattress, with the head and shoulders slightly elevated, a metallic catheter, constructed after the manner of Marion Sims's self-retainer, but with longer curves, so as to adapt itself to the parts, is passed into the bladder through the rectum, when the urine will flow drop by drop from the catheter as

fast as secreted, thus keeping the bladder empty, and none passing into the abdominal cavity or through the urethra. In a few days the catheter may be taken out, and the urine will commence flowing partly through the urethra, increasing day by day until the fistulous opening is closed; this usually takes place from the fourth to the sixth week, depending on the size of the rupture and the constitution of the patient.

There is also another operation which I will suggest: If the bladder is small and well contracted (which is usually the case), and the opening is near the sphincter, all that is necessary to do is to relieve the abdomen of the infiltrated urine, and proceed at once to perform the operation for vesico-rectal fistula after the method of Marion Sims. As soon as the operation is performed introduce and fix a gum-elastic catheter through the urethra into the bladder, and if the operation is well performed there will be no infiltration of urine, but it will flow freely through the catheter, which should be removed every third day and replaced by a fresh one; this prevents distending the bladder until union takes place, which usually takes eight or nine days. The bladder should be kept evacuated for at least a week after union has taken place. Further details of the operation may be learned from "Marion Sims's Uterine Surgery."

CHAPTER V.

RENAL DISEASES.

RENAL HÆMATURIA

Belongs more to the physician than to the genito-urinary surgeon, yet the surgeon is oftener consulted than in any other medical disease. Injuries of the kidney give rise to the most alarming hæmorrhage. Van Swieten mentions a case of a young and previously healthy man, who, after riding a bucking horse, lost eight pounds of blood in a few hours. Rest and internal astringents usually suffice to relieve an attack; dry cupping is a very valuable remedy.

In 1857 I saw a case admitted to the wards of Dr. Maisonneuve at the Hop. de La Pitié, Paris: A stout, stalwart man, aged 45 years, who had fallen off a barracks the night previous; on examination a fracture of the pelvis was found with retention of urine. Dr. Maisonneuve introduced a catheter and drew off only a little clotted blood; the bladder being very much distended he punctured the bladder above the pubes with a large-sized trocar, and drew off a few clots, but was unable to evacuate the bladder in this way; the next morning the man died.

Autopsy, twenty-four hours after death. The bladder was found filled to its utmost capacity with clotted blood; the kidney was very much

congested but no laceration was found; the other organs were comparatively healthy.

RENAL CALCULUS

Often causes hæmaturia; occasional attacks of nephritic colic make the diagnosis clear; the blood is rarely discharged in sufficient quantity to require direct treatment, but a great deal may be done for a person who is a victim of this disease. During the attacks morphia and chloroform should be freely used; the liver being at fault in these cases special attention should be paid to the digestion.

Acute Bright's disease almost always gives rise to attacks of hæmaturia, which are rarely of alarming extent, but often persistent. At the outset a hydragogue cathartic should be given, the patient kept in an even temperature of 70° to 75° F. Tonics, especially Iron and Quinine, should be given in conjunction with a mild diuretic, as infusion of digitalis, with a highly nitrogenous diet. Gallic acid has been highly recommended in all hæmorrhages of the kidneys, under the impression that it enters the circulation and passes out through the kidneys in the urine. I have experimented myself and failed to find this action. Not satisfied with my own examination, I had the urine of a patient who had taken eight or ten grains of Gallic acid, four times a day, the last dose at night, examined by Prof. Wenzell.

The urine was the first passed the next morning, and Prof. Wenzell was unable to find a trace of Gallic acid. Hence, I am of the opinion that Gallic acid has no more action in controlling renal hæmaturia than other astringents, as Iron, Alum, Sulphuric acid, Tannin, Monsel's solution, which do control renal hæmaturia, although they cannot enter the blood.

TUBERCLE OF THE KIDNEY.

Tubercle of the kidney is a well-known disease, causing hæmaturia, as tubercles in the lungs cause hæmoptysis; these cases should be treated in the same manner as the hæmoptysis of phthisis pulmonalis. Prof. Van Buren thinks that these cases are less amenable to treatment than phthisis pulmonalis.

CANCER OF THE KIDNEY.

Fungosity and malignant disease is exceedingly rare, less common than that of the prostate, which was one in every 1650 cases of cancer. Internal astringents, narcotics, and dry cups are the remedies chiefly to be relied on.

MALARIAL HÆMATURIA

Is in America a newly described disease: it occurs in the central part of Alabama and Mississippi. About ten years ago it was quite prevalent around Selma, Ala.; a large number of cases appearing,

which yielded in a few weeks to treatment with large doses of Quinine and Gallic acid.

DIFFERENTIAL DIAGNOSIS.

Before concluding this paper, I will give the diagnostic value of the character of the blood. When the blood passes from the urethra pure and unmixed with the urine, we know that it emanates from a source anterior to the bladder; occasionally it is passed with the urine in long clots, moulded in the shape of leeches, from three to five inches long; this shows that the clots are moulded in the urethra unmixed with the urine, and if long it is an evidence that the source of bleeding is from the membranous or prostatic urethra. When it proceeds from the prostatic gland it is usually pure, and the first portion of the urine is quite bloody, whilst the last portion flows freely and of almost natural color. There are a few exceptions to this rule: when the bleeding is at the posterior portion of the prostate, the blood may be regurgitated into the bladder, and if voided soon after, it flows intimately mixed with the urine, the first and last portions of which have the same appearance, and is usually of a florid color; but if allowed to remain for some time in the bladder before being voided, the urine becomes of a smoky hue, and even as dark as porter; this bloody urine may be confounded with hæmorrhage from the bladder, the appearance of which

is identical; no one can tell from its appearance from whence it came. When the blood proceeds from the bladder, and is voided while the bleeding is actually going on, it is intimately mixed with the urine, and is of a florid color; whilst if allowed to remain an hour or two, disintegration takes place, and the blood is poured out in small clots similar to coffee-grounds, together with an occasional short flat clot one-quarter to one-half inch long.

If the blood proceeds from the kidneys, shreds of clotted blood pass out with the urine, curled up in a small mass, which floated out in water is sometimes six or eight inches long, and of a uniform thickness. By careful attention to these symptoms, together with such others as I have described, one will generally be enabled to form a correct diagnosis.

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